CARBIDE

YG

Being the best through innovation

X-POWER END MILLS

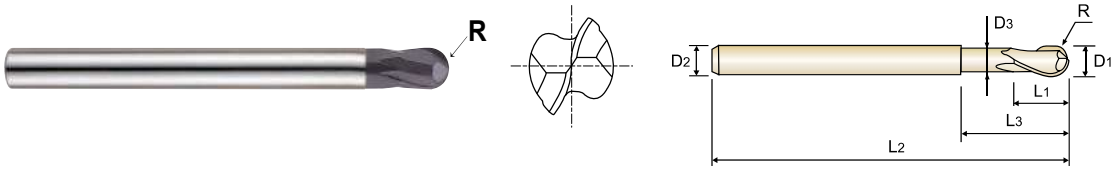
- Medium Steels to High Hardened Steels up to HRc70

X-POWER END MILLS

EM109 SERIES PLAIN SHANK

CARBIDE, 2 FLUTE 15° HELIX STUB CUT LENGTH BALL NOSE for OVER HRc55

- Suitable for HRc55~HRc70 high hardened materials.
- Strong cutting edges and higher tool rigidity.



MG | 2 | 15° | R ±.0005 | PLAIN | P.924

HRc55 ~ HRc70

◆ U.S.A Stock

Unit : Inch

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter
	R (±.0005)	D_1	D_2	L_1	L_3	L_2	D_3
93485	R1/64	**1/32**	1/4	1/32	1/16	2	.029
93486	R1/32	**1/16**	1/4	1/16	1/8	2	.059
93487	R3/64	**3/32**	1/4	3/32	3/16	2	.090
93488	R1/16	**1/8**	1/4	1/8	1/4	2-1/2	.121
93489	R3/32	**3/16**	1/4	3/16	3/8	3	.184
93490	R1/8	**1/4**	1/4	1/4	1/2	3-1/2	.246
93491	R5/32	**5/16**	5/16	5/16	5/8	4	.309
93492	R3/16	**3/8**	3/8	3/8	3/4	4	.371
93493	R1/4	**1/2**	1/2	1/2	1	4-1/2	.496

Mill Dia. Tolerance(inch)	Shank Dia. Tolerance
0~-.0012	0~-.0003

◎ : Excellent ○ : Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HRc20	HRc20~30	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
			○	◎	◎									

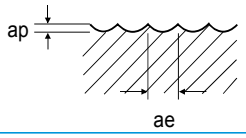
CARBIDE, 2 FLUTE BALL NOSE for OVER HRc55

EM109, EM868 SERIES

■ NORMAL SPEED

MATERIAL	P							
	HARDENED STEELS		HARDENED STEELS		HARDENED STEELS		HARDENED STEELS	
HARDNESS	HRc45 ~ HRc50		HRc50 ~ HRc55		HRc55 ~ HRc60		HRc60 ~ HRc70	
STRENGTH	1500 ~ 1750N/mm^2		1750 ~ 2000N/mm^2		2000 ~ 2080N/mm^2		2080N/mm^2 ~	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R1/16 × 1/8	12700	43.3	12300	41.3	11800	39.4	8400	26.0
R3/32 × 3/16	9400	43.3	9050	41.3	8600	37.4	5600	26.8
R1/8 × 1/4	8600	45.3	8250	43.3	7850	37.4	4850	27.6
R5/32 × 5/16	7000	41.3	6700	39.4	6350	37.4	3800	25.6
R3/16 × 3/8	6050	39.4	5800	37.8	5450	35.4	3200	24.4
R1/4 × 1/2	5450	39.4	5200	37.8	4900	35.4	2750	24.0
R5/16 × 5/8	4350	34.3	4150	32.7	3900	32.3	2150	10.4
R3/8 × 3/4	3500	27.2	3300	25.6	3150	24.8	1700	8.7
R1/2 × 1	2800	27.2	2650	25.6	2520	24.8	1360	8.7

ap: D1/8 =.006″
D3/16 ~ D5/16=.010″
D3/8 ~ D1=.012″
ae: 0.1×D

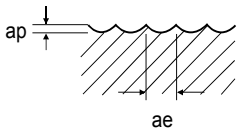


RPM = rev./min.
FEED = inch/min.

■ HIGH SPEED

MATERIAL	P					
	HARDENED STEELS		HARDENED STEELS		HARDENED STEELS	
HARDNESS	HRc45 ~ HRc50		HRc50 ~ HRc55		HRc55 ~ HRc70	
STRENGTH	1500 ~ 1750N/mm^2		1750 ~ 2000N/mm^2		2000 ~ 2080N/mm^2	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED
R1/16 × 1/8	12700	68.9	12300	65.7	11800	33.9
R3/32 × 3/16	9400	65.0	9050	61.8	8600	29.5
R1/8 × 1/4	8600	68.9	8250	65.7	7850	27.6
R5/32 × 5/16	7000	61.0	6700	57.5	6350	25.6
R3/16 × 3/8	6050	57.1	5800	53.5	5450	24.4
R1/4 × 1/2	5450	55.9	5200	52.4	4900	24.0
R5/16 × 5/8	4350	48.4	4150	44.5	3900	10.4
R3/8 × 3/4	3500	39.4	3300	35.4	3150	8.7
R1/2 × 1	2800	39.4	2640	35.4	2520	8.7

ap: D1/8 = .006″
D3/16~D5/16 = .010″
D3/8~D1 = .012″
ae: 0.05×D



RPM = rev./min.
FEED = inch/min.